IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	§	Examiner:	John J. Figueroa
Daniel P. Vollmer	§		
Serial No.: 10/705,180	§	Group Art Unit:	1712
Filed: November 11, 2003	§		
Title: Cellulosic Suspensions Employing Alkali Formate Brines As Carrier Liquid	§	Attorney Docket No.	020569-03900 (P202-1284-US)

Commissioner for Patents
P.O. Box 1450
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DECLARATION UNDER 37 CFR § 1.132 OF DANIEL P. VOLLMER

I, Daniel P. Vollmer, do hereby declare and state that:

1 I am the inventor of the invention set forth in the specification of and defined by the claims in U.S. Patent Application Serial No. 10/705,180 ("Application").

2. I hold a Bachelor of Science (B.S.) degree and a Master of Science (M.S.) degree chemical engineering.

3. In August, 1994, I began employment with OSCA, Inc. ("OSCA"). OSCA was acquired by BJ Services Company ("BJS"), Houston, Texas, in June, 2002. I am currently employed by BJS. BJS is the assignee of Application. I am presently Project Manager, Research Technology, Completion Processes Group, at BJS.

4. I am presently Region Engineer at BJS and am responsible for research and development of oilfield service products including completion fluids. During my employment at BJS, I have developed brine based drilling fluids and hydraulic fracturing fluids as well as brine systems for increasing the thermal stability of water-soluble polymers. In addition, I have been responsible for laboratory experimentation relating to the maintenance and completion operations of

oil and gas wells. Further, I have further designed a spreadsheet model for Newtonian and non-Newtonian fluid flow behavior through porous media.

5. I have authored and presented the following papers:

Daniel P. Vollmer and Brent E. Lejeune, Brine and Permeability Effects on Crosslinked Fluid-Loss Pill Filter-Cake Formation, SPE 93319 presented at the 2005 SPE International Symposium on Oilfield Chemistry, Houston, Texas, U.S.A., 2 – 4 February 2005.

Daniel P. Vollmer, C. S. Fang, Anne M. Ortego, and Emile Lemoine, "Convective Heat Transfer in Turbulent Flow: Effect of Packer Fluids on Predicting Flowing Well Surface Temperatures," SPE 86546 presented at the SPE International Symposium and Exhibition for Formation Damage Control, Lafayette, LA, 18-20, Feb. 2004 and presented at the SPE International Thermal Operations and Heavy Oil Symposium and Western Regional Meeting, Bakersfield, CA, 16-18, March 2004.

Anne M. Ortego and Daniel P. Vollmer, "Brine Viscosities at Temperature and Density," SPE 86506, presented at the SPE International Symposium and Exhibition for Formation Damage Control, Lafayette, LA, 18-20, Feb. 2004.

Brian B. Beall, Terry D. Monroe, Daniel P. Vollmer, and Farid Hanna, "Brine Effects of Hydration Rates of Polymers Used in Completion and Workover Operations," SPE 86505 presented at the SPE International Symposium and Exhibition for Formation Damage Control, Lafayette, LA, 18-20, Feb. 2004.

Fang, C. S., Samudrala, Saritha, K., "Prediction of Thermal Conductivity of Electrolyte Solutions at Elevated Pressures," Paper No. 219d, presented at the AIChE Annual 2003 Meeting, San Francisco, CA, 16-21, Nov., 2003.

Fang, C. S., Daniel P. Vollmer, Emile Lemoine, "Free Convection of Electrolyte Solutions in and Enclosed Annulus," Paper No. 274b, presented at the AIChE Annual 2003 Meeting, San Francisco, CA, 16-21, Nov., 2003.

Daniel P. Vollmer, "Method Predicts Brine Crystallization Temperatures", Oil and Gas Journal, May, 12, 2003, p. 50-53.

Daniel P. Vollmer and C.S. Fang, "Method Obtains Alkali Formate Packer Fluid Thermal Conductivity," Oil and Gas Journal, December 23, 2002, p. 49, 50, 52-53.

Daniel P. Vollmer and C.S. Fang, "Thermal Conductivities of Aqueous Electrolyte Solutions Containing Chlorides, Formates, and Acetates," Paper No. 144I, presented at the AIChE 2002 Spring Meeting, New Orleans, LA, March 10-14, 2002.

S. M. McCarthy, Qi Qu and Dan Vollmer, "The Successful Use of Polymer-Free Diverting Agents for Acid Treatments in the Gulf of Mexico," SPE 73704, presented at SPE International Symposium and Exhibition on Formation Damage Control, Lafayette, LA, 20-21, February 2002.

Daniel P. Vollmer, David J. Alleman, and Allen Grimsley, "HEC No Longer the Preferred Polymer," SPE 653987, presented at the 2001 SPE international Symposium on Oilfield Chemistry, Houston, TX, 13-16 February 2001.

Daniel P. Vollmer, Carla A. Stewart, and David J. Alleman, "Another Precipitation Problem with HEC," Hart's E&P, January, 2000, p. 98-100.

M. Darring, K. Moore, S. A. Ali, D. P. Vollmer, and M. Ke, "Novel Completion Brine Applications at Viosca Knoll in Hot, H_2S and CO_2 Environment," SPE 52155, presented at the 1999 Mid-Continent Operations Symposium held in Oklahoma City, Oklahoma 28-31, March 1999.

Daniel P. Vollmer, Mingie Ke, Mike Darring, Syed Ali, and Anthony Kenrick, "Low-Corrosion Brine Provides High-Temperature Completion Alternative" Oil and Gas Journal, Vol. 96, No. 34, August 24, 1998, p. 48, 51, 52, 54, & 55.

John H. Hallman and Daniel P. Vollmer, "High-Temperature Brine Technology: New Developments Extend the Range," Hart's Petroleum Engineer, Vol. 71, No 4, April 1998, p. 83, 86, 89, & 90.

Daniel P. Vollmer, James D. Garber, Gary A. Glass, Robert D. Braun, Theodore J. St. John, and Wei-Jeng Sheu, "Electrochemical Passivity of Titanium Implanted with 1 MeV Gold Ions", Corrosion Science, Vol 40, No. 2/3, February/March 1998. p. 297 - 306.

Daniel P. Vollmer, James D. Garber, Mohammed R. Madani, Gary A. Glass and Frederick H. Walters, "Electrochemical Impedance Spectroscopy of 3 MeV Nickel Implanted into Steel", Analytical Letters, Vol. 30, No. 2, 1997, p 359 - 366.

Daniel P. Vollmer, Paul H. Javora, Robert L. Horton, Gene Chaubad, William P. Watts, "Avoid Elevated Plastic Viscosities in Drill-in Fluids", JPT, Vol. 48., No. 11, 1996, p 1040-141.

Daniel P. Vollmer, Paul H. Javora, Robert L. Horton, Gene Chaubad, William P. Watts, "Tailoring Brine-Based Drill-In Fluids for Horizontal Well Applications", presented at 8th International Conference on Horizontal Well Technology and Emerging Technologies, Sept. 9-11, 1996.

Robert D. Braun, Emilo E. Lopez and Daniel P. Vollmer, "Low Molecular Weight Straight-Chain Amines as Corrosion Inhibitors," Corrosion Science, Vol. 34, No. 8., 1993, p 1251-1257.

6. In addition to Application, I am an inventor of the following issued U.S. patents:

Qi Qu, Scott McCarthy, Daniel P. Vollmer, Process of Diverting Stimulation Fluids, U.S. 7,220,709 B1, May 22, 2007.

Daniel P. Vollmer and Robert L. Horton, Wellbore Treatment and Completion Fluids and Methods

of Using the Same, U.S. 6,632,779, Oct. 14, 2003.

Daniel P. Vollmer, Well Treatment Fluids and Methods for the Use Thereof, U.S. 6,509,309, Jan., 21, 2003.

Daniel P. Vollmer, Methods for Enhancing Wellbore Treatment Fluids, U.S. 6,489,270, Dec. 3, 2002.

Daniel P. Vollmer, Well Treatment Fluids and Methods for the Use Thereof, U.S. 6,432,885, Aug. 13, 2002.

Daniel P. Vollmer and Robert L. Horton, Carboxylate-Based Well Bore Treatment Fluids, U.S. 6,248,700, June 19, 2001.

Daniel P. Vollmer, Paul H. Javora, and Robert L. Horton, High Density, Viscosified, Aqueous Compositions Having Superior Stability Under Stress Conditions, U.S. 6,100,222, Aug. 8, 2000.

Daniel P. Vollmer, Paul H. Javora, and Robert L. Horton, Viscosification of High Density Brines, U.S. 5,785,747, July 28, 1998.

7. The claims of the instant application are directed to a method of thickening brine during the recovery of oil and/or gas from a subterranean formation in order to alleviate the loss of brine into the formation, wherein the brine is thickened by addition of a suspension containing a cellulosic polymer to the brine. The cellulosic polymer suspension set forth in the instant application functions as a fluid loss pill.

8. I have read and understood the Office Action dated December 14, 2007 issued in the proceeding of the instant application. I have further read and understood U.S. Patent No. 6,479,573 ("*Burdick*") and U.S. Patent No. 6,315,061 ("*Boatman*"), discussed in paragraph 6 of the Office Action.

9. *Burdick* discloses a method of thickening an aqueous system, such as a latex paint or an oil well drilling mud, with a thickener such as a cellulosic polymer (col. 5, ll. 44-56) in an aqueous salt, such as sodium formate (col. 4 ll. 19-37). *Burdick* does not disclose a method for alleviating the loss of brine into a subterranean formation during the recovery of oil and/or gas from the formation by introducing to the brine a cellulosic polymer suspended in an alkali formate. Neither does *Burdick* disclose a method for thickening a brine during the recovery of oil and/or gas from a formation with a cellulosic polymer suspended in an alkali formate in order to alleviate the loss of brine into the formation.

10. The drilling mud of *Burdick* does not function as a fluid loss pill. Further, a fluid loss pill is not synonymous with a drilling mud. *Burdick* recognizes the unpredictable behavior in aqueous solutions containing various salts. *See*, for instance, the bridging paragraph of columns 2 and 3 of *Burdick*. In fact, *Burdick* concludes that the behavior of a given polymer in an aqueous salt solution cannot be predicted. Not only is the behavior of a given polymer unpredictable in one brine versus another brine, the behavior of different polymers in the same brine cannot be predicted. The behavior of an aqueous salt solution containing a polymer would likewise be different when used as a drilling mud versus used as a fluid loss pill.

11. *Boatman* discloses a method of adjusting the density of the aqueous phase of a ballast fluid by adding a formate salt to the aqueous phase. *Boatman* does not disclose thickening of a brine by use of a cellulosic polymer suspended in an aqueous formate salt.

12. The objective of the instant application is not to increase the density of the brine which is being thickened since typically the density of the brine being thickened is greater than the density of the formate salt cellulosic suspension. Instead, the objective in the instant application is to thicken the brine. In the instant application, adjustment of the density of a brine is not equivalent to thickening of the brine.

13. The viscosity of a drilling mud is dramatically less than the viscosity of a fluid loss pill. Typically, the viscosity of a drilling mud does not exceed 50 or 60 cP when measured on a Fann 35 at 600 rpm. The viscosity of a fluid loss pill is typically greater than 200 cP and most desirably greater than 300 cP when measured on a Fann 35 at 600 rpm. The viscosity of a drilling mud is desired to be sufficient only enough to prevent drilled cuttings and other mud solids from settling out of the drilling mud, but minimized to allow easy circulation into and out of the wellbore; hence the low viscosity of drilling mud compared to fluid loss pills.

14. The fluid loss capacity of drilling fluid is dependent on mud solids. The fluid loss capacity of a fluid loss pill is dependent on viscosity and, when added, any removable solids to augment fluid loss control.

15. It is well understood in the industry that the fluid loss control provided by drilling mud damages the formation and prevents suitable production from the well, while the fluid loss control provided by a fluid loss pill protects the formation and allows for maximum production from the well. The instant application is directed to a fluid loss pill, not to a drilling mud.

16. The amount of cellulosic polymer present in the formate suspension of the instant application may be from about 45 ppb (Ex. No. 1) to about 95 ppb (Ex. No. 3). About 0.5 to about 8 ppb of cellulosic polymer is required to viscosify the target brine. If the cellulosic polymer is present in the target brine in an amount less than about 0.5 ppb, the brine could not be thickened to the extent needed to prevent it from being lost into the formation. Amounts greater than about 8 ppb typically do not render a pumpable fluid.

17. *Boatman* exemplifies the use of a liquid hydroxyethyl cellulose (HEC) product, LIQUI-VIS EP™, in a drilling fluid. Typically, there is no greater than about 30 volume percent HEC in a liquid carrier. If the product of *Burdick* contained 30 vol. percent of HEC, this would be equivalent to 0.13 lbs of polymer. This would be an insufficient amount of polymer to thicken the brine. Thus, the product of *Boatman* could not function as a fluid loss pill.

18. In light of the differences in viscosity between a drilling mud and a fluid loss pill, the drilling mud of *Boatman* would be incapable of alleviating the loss of brine during the recovery of oil and/or gas from a subterranean formation. As such, neither *Burdick* nor *Boatman* disclose or suggest the method claimed in the instant application.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and believe are believe to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

DATED: June 13, 2008

Daniel P. Vollmer

DANIEL P. VOLLMER